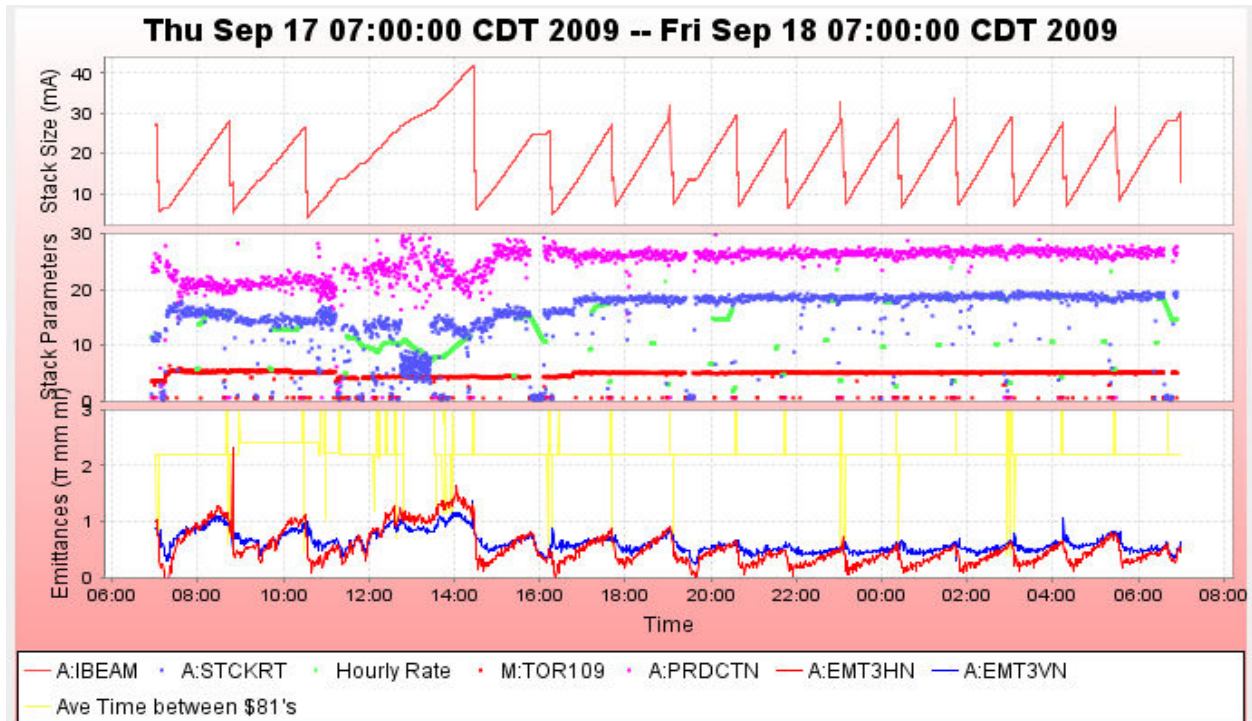


Stacking



- Dedicated expert tuning on the evening shift that helped both stacking and transfers.
- Stacking Numbers
 - $\langle \text{stack rate} \rangle = 17.8 \text{ mA/hr}$
 - $\langle \text{production} \rangle = 25.8 \text{ e-6/p}$
 - $\langle \text{POT} \rangle = 4.4 \text{ e } 12$
- AP0 scope communication was restored. This required both software work as well as a recalibration. This scope provides
 - Proton Torpedo display during stacking
 - Longitudinal Emittance plot during unstacking.

Transfers

Column 4 Number_3_Transfer Time	Column 21 Number_20_A:1 BEAMB sampled on \$91 (A-BEA M7), E10	Column 22 Number_21_A:1 BEAMB sampled on \$94 (A-BEA M9), E10	Unstacked (mA)	Column 23 Number_22_R: BEAMS (R:BEA ME0(0)) pre zfer E10	Column 24 Number_23_R: BEAM (R:BEA ME0(1)) post zfer, E10	Stacked	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance	
Totals =>			352.78			326.68	92.60%	78.51%	97.00%	30	15	5.8002	6.0948	1.9665	
Friday, September 18, 2009	6:58	30.18	5.96	25.15	253.54	277.30	23.92	95.10%	33.99%	96.83%	2	1	4.543	5.125	1.876
Friday, September 18, 2009	5:28	27.08	8.07	19.93	236.99	255.02	18.09	90.78%	96.45%	95.72%	2	1	6.625	6.846	2.055
Friday, September 18, 2009	4:15	27.80	6.57	22.14	217.34	237.97	20.70	93.52%	98.33%	96.75%	2	1	5.525	5.74	1.975
Friday, September 18, 2009	3:02	29.16	6.96	23.11	196.43	218.10	21.80	94.33%	68.41%	98.99%	2	1	5.198	5.82	1.989
Friday, September 18, 2009	1:44	29.10	7.15	22.88	175.44	197.07	21.70	94.83%	72.50%	98.34%	2	1	4.562	5.964	1.994
Friday, September 18, 2009	0:23	28.48	6.32	23.03	154.44	176.06	21.71	94.27%	56.46%	97.82%	2	1	4.208	5.048	1.967
Thursday, September 17, 2009	23:05	28.58	7.13	22.35	133.78	154.94	21.19	94.82%	97.21%	97.17%	2	1	4.568	5.304	1.978
Thursday, September 17, 2009	21:45	26.11	6.32	20.72	114.63	134.21	19.73	95.24%	48.44%	96.97%	2	1	3.66	4.979	1.99
Thursday, September 17, 2009	20:35	29.38	6.73	23.35	93.09	115.04	22.10	94.62%	97.63%	97.80%	2	1	4.64	5.227	1.992
Thursday, September 17, 2009	19:03	29.30	7.11	23.11	72.85	93.58	20.85	90.25%	96.68%	95.85%	2	1	7.327	7.224	2.016
Thursday, September 17, 2009	17:41	27.22	6.59	21.53	53.22	73.07	19.90	92.41%	17.89%	97.83%	2	1	7.182	6.474	2.006
Thursday, September 17, 2009	16:13	25.81	4.85	21.68	32.73	53.32	20.67	95.36%	98.74%	98.88%	2	1	4.481	4.992	1.897
Thursday, September 17, 2009	14:27	42.04	5.89	36.79	0.96	32.87	31.98	86.93%	94.75%	95.09%	2	1	8.769	7.775	1.829
Thursday, September 17, 2009	10:30	26.63	4.02	23.30	130.12	150.95	21.08	90.46%	95.87%	96.82%	2	1	7.404	7.299	
Thursday, September 17, 2009	8:45	28.18	5.21	23.72	109.91	131.04	21.25	89.61%	95.65%	95.32%	2	1	8.311	7.605	

- Transferred 353mA over 30 transfers in 15 sets.
 - Acc to RR efficiency was 92.6%, but better after evening shift tuning - 94-95%.
 - Stacktail kicker tanks moved to minimize heating
 - Backed off on the stacktail
 - Moved the extraction kicker timing 20nsec earlier to stop the first bunch from being shaved.

Problems

- Deubncher D:BJ708 limit switch toggling
- Problem with ARF4 ramps not plotting during transfers.

Requests

The Numbers

- Stacking
 - Pbars stacked: 353.66 E10
 - Time stacking: 23.87 Hr
 - Average stacking rate: 14.81 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 37782
 - Number of pulses with beam: 35406
 - Fraction of up pulses was: 93.71%
- The uptime's effect on the stacking numbers
 - Corrected time stacking: 22.37 Hr
 - Possible average stacking rate: 15.81 E10/Hr
 - Could have stacked: 377.39 E10/Hr
- Recycler Transfers
 - Pbars sent to the Recycler: 367.73 E10
 - Number of transfers : 31
 - Number of transfer sets: 15
 - Average Number of transfer per set: 2.07
 - Time taken to shoot including reverse proton tuneup: 00.11 Hr
 - Transfer efficiency: 87.52%

- Other Info
 - Average POT : 4.27 E12
 - Average production: 23.38 pbars/E6 protons
- * Missed one or more A:IBEAM7 events somewhere in the middle of the user selected time span. Calculated time shot using 13 secs per transfer.
-

Weekly Numbers

- Stacking
- Pbars stacked: 794.99 E10
- Time stacking: 121.50 Hr
- Average stacking rate: 06.54 E10/Hr
- Uptime
- Number of pulses while in stacking mode: 164249
- Number of pulses with beam: 133299
- Fraction of up pulses was: 81.16%
- The uptime's effect on the stacking numbers
- Corrected time stacking: 98.61 Hr
- Possible average stacking rate: 08.06 E10/Hr
- Could have stacked: 979.58 E10/Hr
- Recycler Transfers
- Pbars sent to the Recycler: 781.77 E10
- Number of transfers : 61
- Number of transfer sets: 25
- Average Number of transfer per set: 2.44
- Time taken to shoot including reverse proton tuneup: 00.22 Hr
- Transfer efficiency: 87.04%
- Other Info
- Average POT : 2.83 E12
- Average production: 21.05 pbars/E6 protons
- * Red indicates a problem during data retrieval. See the message window for details.
- * Missed one or more A:IBEAM7 events somewhere in the middle of the user selected time span. Calculated time shot using 13 secs per transfer.
-

Plots

